Streamlining the BOSH Experience
Why?

Feedback + Dynamic Services
IAAS and Network Configuration

1. operator is responsible for IP allocation
2. synchronizing networks across deployments
3. updating IAAS properties across deployments
Cloud Config

1. one IAAS configuration per Director
2. Director is responsible for IP allocation
3. separate responsibilities
deployment info

resources

networks

resource pools + stemcells

disk pools

compilation

update

jobs

releases:
  - name: redis
    version: 12
networks:
- name: private
type: manual
subnets:
- range: 10.10.0.0/24
gateway: 10.10.0.1
dns: [10.10.0.2]
reserved:
- 10.10.0.2-10.10.0.10
cloud_properties:
  availability_zone: us-east-1c
  subnet: subnet-9be6c3f7
deployment info

releases

networks

resource pools + stemcells

- resource_pools:
  - name: redis-servers
    network: private
    cloud_properties:
      instance_type: c3.medium
      availability_zone: us-east-1c
    stemcell:
      name: bosh-aws-xen-ubuntu-trusty-go_agent
      version: 2708

disk pools

compilation

update

jobs
deployment info
releases
networks
resource pools + stemcells
disk pools
compilation
update
jobs
disk_pools:
- name: large
disk_size: 1024
cloud_properties:
type: gp2
deployment info

releases

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resource pools + stemcells

disk pools

compilation:
  workers: 2
  network: private
  cloud_properties:
    instance_type: c3.medium
    availability_zone: us-east-1c

update

jobs
deployment info

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resource pools + stemcells

disk pools

compilation

update

jobs

update:
  canaries: 1
  max_in_flight: 10
  canary_watch_time: 30000 - 90000
  update_watch_time: 30000 - 90000
jobs:
- name: redis-master
  instances: 1
- name: redis-server
  release: redis
  persistent_disk_pool: large
  resource_pool: redis-servers
  networks:
  - name: private
bosh update cloud-config ./cloud.yml
Deployment manifest

deployment info

releases

stemcells

- alias: ubuntu-latest
  os: ubuntu-trusty
  version: latest

update

instance_groups
Deployment manifest

- **deployment_info**

- **releases**

- **stemcells**

- **update**

- **instance_groups**

  ```
  instance_groups:
  - name: redis-master
    instances: 1
  jobs:
  - name: redis-server
    release: redis
    properties:
      master: true
      persistent_disk_type: large
      vm_type: fast
    stemcell: ubuntu-latest
  networks:
  - name: private
  ```
Load Tests

- 100 of deployments in parallel
- race conditions
- dummy CPI
Links

• release author defines dependencies between jobs
• automatic or explicit linking
• linking properties between jobs, releases and deployments
Availability Zones

• first class citizen
• no duplication
• automatic rebalancing
• coming: az state
Cloud Config

```
azs:
  - name: z1
    cloud_properties:
      availability_zone: us-east-1b
  - name: z2
    cloud_properties:
      availability_zone: us-east-1c
```

Deployment manifest

```
instance_groups:
  - name: web
    instances: 1
    azs: [z1, z2]

jobs:
  - name: web
    vm_type: fast
    networks:
      - name: private
```
Migrating to AZs

instance_groups:
- name: web
  instances: 2
  azs: [z1, z2]
  jobs: {name: web}
  migrated_from:
  - name: web_z1
    instances: 1
    jobs: {name: web}
    vm_type: fast_z1
  - name: web_z2
    instances: 1
    jobs: {name: web}
    vm_type: fast_z2
  networks:
  - name: private

instance_groups:
- name: web
  instances: 2
  azs: [z1, z2]
  jobs: {name: web}
  migrated_from:
  - {name: web_z1, az: z1}
  - {name: web_z2, az: z2}
  vm_type: fast
  networks:
  - name: private
if spec.bootstrap

# run migrations

end
Fuzz Tests

• random deployment manifests
• asserting on behavior
• caught interesting edge cases
Orphaned Disks

- persistent data is always recoverable
- kept for 5 days
- can be re-attached to any instance
bosh disks --orphaned

bosh attach disk <instance-group> <id> <disk-cid>
Deployment Hooks

- install
- pre-start
- start
- post-start
- post-deploy
Addons

- installed on every node
- runtime config
Backwards Compatible

• opt-in features
• separate CI pipelines
• Concourse
Coming Up

- Stemcell hardening
- Events audit trail
- UAA scopes
- Better DNS
- Simplifying manifest
Q&A

bosh.io
github.com/cloudfoundry/bosh
cloudfoundry.slack.com/bosh